REMARKS

Claims 11 and 13-35 are cancelled without prejudice. New claims 36-49 are added, which correspond to claims 11, 13, 16-17, 21-23, 30-31 and 35, respectively, the former claims under examination.

The wording of the new claims is deemed to overcome each ground of rejection of the former claims under 35 USC 112, second paragraph, set forth on pages 11-12 of the Action.

The only other ground of rejection set forth in the Action is the rejection of the former claims under 35 USC 112, first paragraph, as lacking enablement.

To the extent that the enablement rejection is based on an *in vivo* process, this ground of rejection is deemed to be overcome by the wording of the new claims. The expression *in vivo* used in the specification and the former claims was intended to mean that the meiotic recombination of the partially homologous DNA sequences is performed in the cells themselves, as opposed to outside the cells. It was not intended to mean that the recombination occurs in a living body. The wording of the new claims clarifies that the process occurs *in vitro*.

To the extent that the enablement rejection is based on the unpredictability of success of the invention in animal cells, this position is respectfully traversed.

The Examiner takes the position that the utility data in the specification on yeast does not reasonably predict the utility of the invention in animal cells.

However, one of ordinary skill in the art would consider yeast to be a suitable model system for animal systems. The following scientific literature support this fact, copies of which are enclosed.

1. NIH Guide: Non-Mammalian Organisms As Models for Anticancer Drug Discovery

2. Models and Mechanisms: Yeast, The Welcome Trust

3. Kate Arney, PhD, "Untangling The Model Muddle", The Naked Scientists

4. Joseph Heitman, MD, PhD, "Signal transduction cascades regulating development and virulence of microorganisms", Duke University Medical Center

5. Robert Klevecz, PhD, "Tuning in the Transcriptome: Basins of Attraction in the Yeast Cell Cycle", University of Maine

6. Chapter 17, The Division Cycle, Molecular Biology of the Cell, Third Ed., Bruce Alberts et al., Garland Publishing, pages 883-884.

The yeast model system is often used in preference to animal cells, because:

1. The small size of the yeast genome relative to the genome of animal cells and similarity to the animal genomes, especially human. See Models and Mechanisms:Yeast mentioned above and submitted herewith.

2. Key regulatory pathways among eukaryotic organisms are similar. See the NIH Guide mentioned above and submitted herewith.

3. Ease of genetic manipulation. See the NIH Guide.

4. Ease of manipulation of yeast cells, rapid and controllable cell reproduction.

5. Lack of pathenogenicity when compared with some animal cells.

6. Lack of ethical objections compared with use of mammalian cells.

The present specification clearly shows that the claimed processes are successful in yeast cells. One skilled in the art would have a reasonable expectation from such experimental data that the claimed processes will be successful in animal cells.

Accordingly, it is respectfully submitted that one skilled in the art would have reasonable expectation of successfully performing the claimed processes using animal cells without undue experimentation, based upon the teachings of the specification and the knowledge in the art.

Thus, reconsideration and withdrawal of this ground of rejection is solicited.

Lastly, the Applicant notes that the Examiner has quoted the following references in the Office Action:

1. on page 5, Edelmann et al. (Cell 1996);
2. on page 8, Lipkins et al. (Nature Genetics 2002);
3. on page 9, Moens et al. (J. Cell Sci. 2001); and
4. on page 10, Santucci et al. (FASEB 2000).

The priority date for this application is April 1, 1996. It is unclear from the Action if the Examiner is using these papers as prior art or merely to illustrate his point. The Examiner is kindly requested to please keep in mind that references 2-4 are not available as prior art against this application, since the references have publication dates after April 1, 1996. Regarding reference 1, the date of Edelmann et al. is given as only "1996". If this publication date is after April 1, 1996, then this reference also cannot be used as prior art against the present application.

In view of the foregoing, it is believed that each ground of rejection and objection set forth in the Official Action have been overcome, and that the application is now in condition for allowance. Accordingly, such allowance is solicited.

Respectfully submitted,

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